

## **The Relationship between Pre-Treatment Seizures and Mental Health in People with Newly Diagnosed Focal Epilepsy**

**Purpose of study:** The prevalence of anxiety disorders, mood disorders, and suicidal ideation is significantly higher in people with epilepsy compared to the general population. This study explores the relationships between pre-treatment seizures, baseline characteristics, and psychiatric comorbidities in people with newly diagnosed focal epilepsy, to help inform targeted interventions for improving recognition and treatment of mental health comorbidities in this population.

**Methods used:** This secondary analysis of Human Epilepsy Project (HEP) data included participants aged 18-60 with newly diagnosed focal epilepsy from 34 sites globally. The study used demographic data, seizure histories and enrollment neuropsychiatric assessments to model associations between participant characteristics and the presence of anxiety, depression and suicidality near the time of initial diagnosis using logistic regression. Analyses were adjusted for multiple participant characteristics, including age, sex, seizure burden, and employment status, to account for potential confounders.

**Summary of Results:** Of 347 participants with complete data for analysis in this study, 85 (24%) had an anxiety disorder, 65 (19%) had a mood disorder, and 75 (22%) had suicidal ideation. Compared to the U.S. population, the prevalence of anxiety disorders was 1.26 times higher, mood disorders were 3.8 times higher, and suicidal ideation was 5.5 times higher. Employed participants were significantly more likely to have anxiety disorders (2.39 times, 95% CI: 1.31 to 4.37,  $p < 0.05$ ), mood disorders (2.43 times, 95% CI: 1.27 to 4.65,  $p < 0.01$ ), and suicidal ideation (2.30 times, 95% CI: 1.23 to 4.29,  $p < 0.01$ ). There were no significant associations between psychiatric comorbidities and age, sex, or pre-diagnostic seizure burden.

**Conclusions:** This study demonstrates that employment is a statistically significant factor in the prevalence of anxiety disorders, mood disorders, and suicidal ideation, confirming previous research findings in patients with newly diagnosed focal epilepsy. In contrast, age at enrollment, sex, and pretreatment seizure burden were not significantly associated with these psychiatric comorbidities. These results highlight the unique impact of employment status on mental health in this patient population. The significant association between employment status and psychiatric comorbidities suggests that the stressors related to maintaining employment while managing a new epilepsy diagnosis may exacerbate mental health challenges. Continuing to work, managing workplace stigma, and coping with potential limitations on autonomy may play a more significant role in mental health outcomes than previously recognized.